

GLYPHIPTERYGIDAE.

Glyphipteryx plagigera n. sp.

♂♀. 9½–11 mm. Head ochreous-white. Thorax fuscous-brown. Palpi moderately tufted beneath, ochreous-white with 4 obscure fuscous rings. Abdomen blackish-grey, obscurely annulated with white. Posterior legs black, tibiae and tarsi annulated with white. Forewings elongate, moderately dilated posteriorly, costa moderately arched, apex obtuse, termen oblique; dark greyish-fuscous, purplish tinted and more or less sprinkled with white posteriorly; a narrow, outwardly oblique, white streak from costa at ¼, reaching to near middle of wing; 5 similar streaks between this and apex, the last two less oblique; a broad white blotch on dorsum near base and a similar one before middle, sometimes uniting at apex; an obscure white streak from tornus, sometimes uniting with third costal streak: cilia fuscous-grey with median line and apical hook darker. Hindwings broadly lanceolate; fuscous-grey: cilia fuscous-grey.

Distinguished from *G. leptosema* Meyr. and *G. iochaera* Meyr., which have somewhat similar markings, by the tufted palpi. *G. oxymachaera* Meyr. has tufted palpi, but differs from the present species by the absence of the dorsal blotches and the presence of a submedian stripe.

Bluff, in November. Three specimens.

ART. XLIV.—*Notes on some Coccidae in the Canterbury Museum, together with a Description of a New Species.*

By G. BRITTIN.

[Read before the Philosophical Institute of Canterbury, 3rd November, 1915.]

SINCE my last paper on New Zealand *Coccidae* was read before this Institute I have had an opportunity of making an examination of the Coccid slides deposited in the Canterbury Museum by the late Mr. W. M. Maskell, and the following are some notes on the different species.

Eriococcus multispinus Mask., Trans. N.Z. Inst., vol. 11 (1879), p. 217; vol. 23 (1891), p. 21; vol. 24 (1892), p. 31.

In dealing with this species, Mr. Maskell has undoubtedly mixed up *E. multispinus* with *E. pallidus*. In his original diagnosis of *E. multispinus* (vol. 11, p. 217) he states, "The insect is seen to have several rows of large conical spines. . . . The antennae have 6 joints, the 3rd being the longest, the 4th and 5th equal to each other and nearly round." Again, in giving the generic and group distinctions among the *Acanthococcidae* and *Dactylopinæ* (vol. 24), "Passing now to the genus *Eriococcus*, figs. 11, 12, and 14 of Plate IV show that there are three antennal forms, and figs. 16 and 17 that there are two forms of marginal spines in the genus. Fig. 14 (*E. raithbyi*) differs from fig. 11 (*E. multispinus*) only in having 7 joints: in both the joints are subequal. But in fig. 12 (*E. pallidus*) the 3rd joint is much longer than any of the others. As regards the spines, those of *E. pallidus* and its allies are shown in fig. 16 to be much larger and more slender than those of *E. multispinus* and its allies, fig. 17." In treating of the variations of *E. pallidus* (vol. 23, p. 21), he says, "This species exhibits several variations in the arrangement of the dorsal spines, and

slightly in the size and colour of the sac. . . . I leave all these as variations of one species, chiefly on account of the antennae, which I find similar in all, with 6 joints, of which 5 are subequal; but the 3rd joint is longer, usually equal to any two of the others. This character, together with the slenderness of the spines, distinguishes *E. pallidus* from *E. multispinus*, irrespective of variations in the sac, which are not, indeed, important."

There can be no doubt after reading these different descriptions that Maskell's first description of *E. multispinus* undoubtedly referred to what he afterwards called *E. pallidus*, the antennae of which have 6 joints, the 3rd being the longest, and the spines long and slender. On the other hand, the antennae of *E. multispinus* consist of 6 subequal joints, and the spines are, in comparison, short and broad.

Now, this alteration in the diagnosis would not have been of so much consequence but for the fact that Mr. Maskell made the same mistake when forwarding specimens to others who were working on the *Coccidae*, and the slide in the Museum shows that such a mistake has evidently been made, and it needs only a slight glance at this specimen to see that the 3rd joint of the antennae is much longer than any of the others and that the spines are long and slender, both of which facts point to its being *E. pallidus*. Unfortunately, there are no slides in the Museum labelled "*E. pallidus*," so that the two species cannot be compared.

Some time ago I forwarded to Mr. E. E. Green, F.E.S., one of the leading English authorities on the *Coccidae*, some specimens, under the name of *E. multispinus*, and received an answer saying that it differed in several important characteristics from Maskell's *multispinus*. On my still pointing out several characteristics mentioned by Maskell in Trans. N.Z. Inst., vol. 23, I received the following, which I here quote: "I see that you are right about the 6-jointed antennae of *E. multispinus*, but on comparing your specimen with typical examples (received from Maskell himself) I am still of opinion that your insect is distinct. The character and arrangement of the spines is very different in the two insects. If the difference should be considered to be insufficient to warrant the erection of a new species, your insect should at least be distinguished by a varietal name." I have lately forwarded Mr. Green specimens of both species, and at the same time pointed out the mistake made by Mr. Maskell when describing his species.

Dactylopius poae Mask., Trans. N.Z. Inst., vol. 11 (1879), p. 220; vol. 23 (1891), p. 23.

This is another species that will want investigating. The normal generic characters of this genus are as follows: Adult female with antennae of 8 joints, the last joint almost invariably longer than the penultimate; mentum biarticulate; legs persistent; anal lobes small or rudimentary. In the genus *Rippersia* the antennae consist of 6 joints, rarely of 5 or 7. Maskell's diagnosis of *D. poae*, given in Trans., N.Z. Inst., vol. 11, p. 220, is practically useless as a means of identification. In his book on "New Zealand Scale Insects" he simply mentions that the antennae consist of 8 joints, and are very short. The slide in the Museum labelled "*D. poae*" contains only the anterior portion of the insect, with the antennae, rostrum, and anterior pair of legs. I made a very careful examination of the antennae, and found that it consisted of only 6 joints, the 3rd and apical joints being longest and about equal to each other. This

material difference would, of course, at once place the insect in the genus *Rippersia*, and, if all the other characteristics are the same, would agree with my description of *Rippersia globatus*, published in Trans. N.Z. Inst., vol. 47, p. 155, which I think will eventually become a synonym of Maskell's species under the name of *Rippersia poae*.

Eriochiton spinosus Mask.

Ctenochiton spinosus Mask., Trans. N.Z. Inst., vol. 11 (1879), p. 212.

Eriochiton spinosus Mask., Trans. N.Z. Inst., vol. 19 (1887), p. 47. *Lecanium armatus* Brittin, Trans. N.Z. Inst., vol. 47 (1915), p. 152.

This species is undoubtedly the same as the one reported by me under the name of *Lecanium armatus*. Maskell's diagnosis and diagrams of *E. spinosus* are very imperfect, and it was little wonder that I was unable to recognize it from his description. In vol. 11, p. 212, when describing it under the name of *C. spinosus*, he states that the abdominal lobes are as usual. This is not correct, and, in fact, the lobes appear to be very unusual for the genus *Ctenochiton*. Again, in *E. spinosus* the anal ring is situated between the lower half of the abdominal lobes. Since my last paper was read before this society I have been able to find specimens covered with a thin cottony test, similar to that of an *Eriococcus*. These specimens will, I think, turn out to be Maskell's *E. hispidus* (Trans. N.Z. Inst., vol. 19, p. 47). They appear to agree very well with his description, but the difference is so slight that they may be eventually placed as a variety of *E. spinosus* rather than as a distinct species. Up to the present time I have been unable to find any signs of a test covering my original species. Maskell's slide in the Museum is a typical example of the species.

Mytilaspis drimydis Mask., Trans. N.Z. Inst., vol. 11 (1879), p. 196.

I have carefully examined the slide of this species deposited in the Museum, and can come to no other conclusion than that it is the second instar of one of the *Fiorinia*, and most probably *F. stricta*. The extremity of the pygidium, with its broad flat squames, small narrow lobes, and the presence of few dorsal spinnerets, together with the absence of grouped circumgenital glands, all point to its being the early stage of the second instar of some species of the *Fiorinia*. I should mention that Maskell's *F. stricta* and *F. asteliae* have been both placed in the genus *Leucaspis*.*

Subfam. DIASPINAE.

Genus ODONASPIS?

Odonaspis ? *leptocarpi* sp. nov.

Puparia of the females situated underneath the ligules of the plant on which they live; they are always found packed closely together, and consequently it is very hard to distinguish the separate puparia. Ventral scale complete, white, and remains firmly attached to the plant; dorsal portion white, elongate. Exuviae yellow, and appear to be situated rather to one side at the anterior extremity. Dorsal portion generally attached to ligule, and separates from the ventral scale on detaching the ligule from the stem, thus leaving the insect uncovered.

* E. E. Green, F.E.S.: "Some Remarks on the Coccid Genus *Leucaspis*, with Descriptions of Two New Species." Trans. Entom. Soc., London, February, 1914, pt. iii, iv.

Adult female elongate-ovate, being equally rounded at both extremities; colour pink, turning bright green on maceration in potash. Segmentation very distinct. Body covered with minute wrinkles. Eyes in living insects very prominent, and appear as large dark granulated spots. Rudimentary antennae with two or three rather long hairs. Rostrum rather more chitinated than is usually found in the *Diaspinae*; mentum appearing as a round ring. Spiracles widely dilated at outer extremity and tapering inward to a small round orifice. Parastigmatic glands absent. Pygidium broader than long, slightly chitinated, with 5 groups of circumgenital glands; anterior group 6-8 glands; anterior laterals 16-18; posterior laterals 18-24; anterior group widely separated from the rest; lateral groups almost joining. Anal orifice situate midway between anterior lateral groups. Margin of pygidium with a crenulate appearance, without lobes or large marginal tubular spinnerets. Dorsal tubular spinnerets in series; the first six series are immediately beneath the grouped glands, and each consists of from 6 to 8 spinnerets, extending directly upwards towards the grouped glands; the next series on each side extends upwards along the outer side of the circumgenital glands to a level with the anterior group. Each segment above has numerous tubular spinnerets at the outer margin, and on each articulation there is a series of rather larger spinnerets extending directly in towards the body; there are also a few spinnerets on the lower half of the cephalic segment. Above the antennae there are a few short spiny hairs.

Length, about 1.08 mm; width, 0.54 mm.

Hab.—On *Leptocarpus* sp., at present only from New Brighton.

NOTE.—The genus *Odonaspis* has not hitherto been recorded as occurring in New Zealand.

ART. XLV.—*New Light on the Period of the Extinction of the Moa (according to Maori Record).*

By T. W. DOWNES.

[Read before the Wanganui Philosophical Society, 26th January, 1916.]

It would be hard to find anything connected with the natural history of New Zealand that has attracted more attention than the extinct moa. Over seventy papers, containing several hundred pages of matter, have been published in the "Transactions of the New Zealand Institute," and of this matter a large portion deals with the period of extinction; yet the date is by no means settled, and I have no doubt that any additional light that will assist in arriving at a solution of this much-discussed question will be welcomed by those who are interested in the subject.

Arguments relating to this discussion have been carefully studied and summarized by F. W. Hutton in a fine paper entitled "The Moas of New Zealand" (Trans. N.Z. Inst., vol. 24, p. 93), and the writer, after careful deliberation, comes to the conclusion that in the North Island the moa was exterminated by the Maori not very long after their arrival in New Zealand—that is, not less than four or five hundred years ago—and that they existed for about one hundred years later in the South Island.

Among the gentlemen who held a contrary view—namely, that the moa was exterminated in quite recent years—I would mention J. W. Hamilton, J. and W. Murison, J. H. Coburn, James Hector, John White, W. T. L.